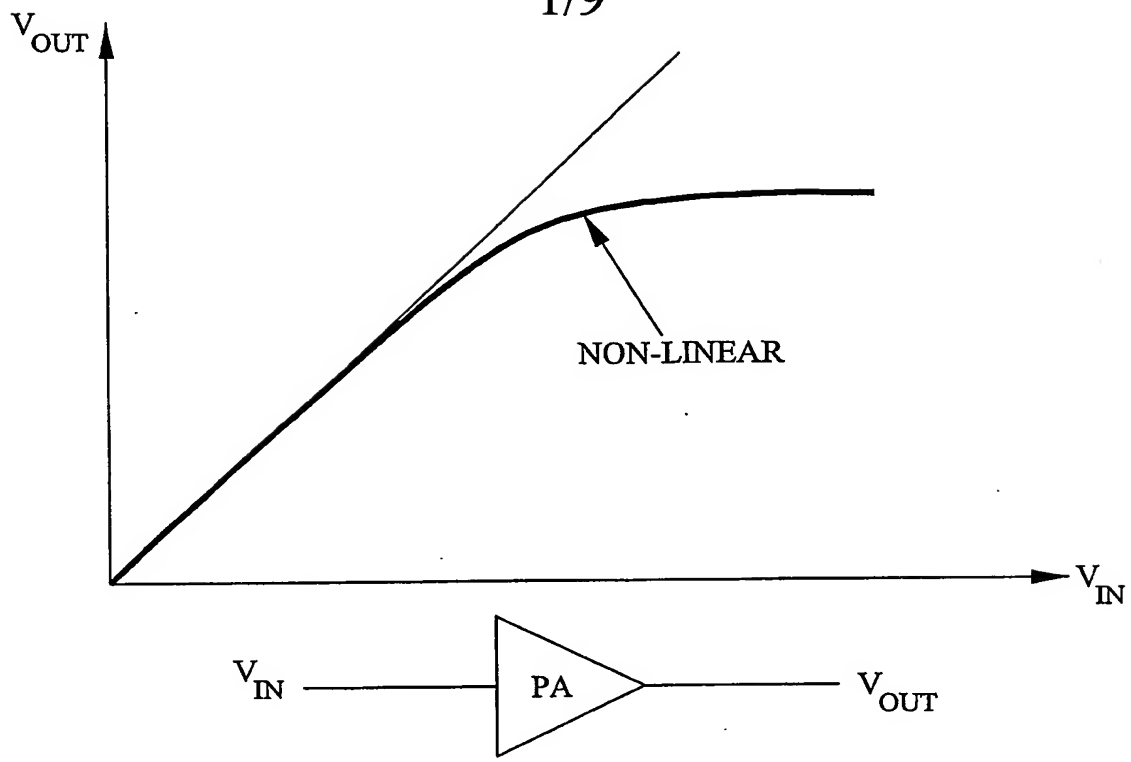
V_{OUT}
NON-LINEAR
V_{IN}
V_{IN}
PA
V_{OUT}

Fig. 1

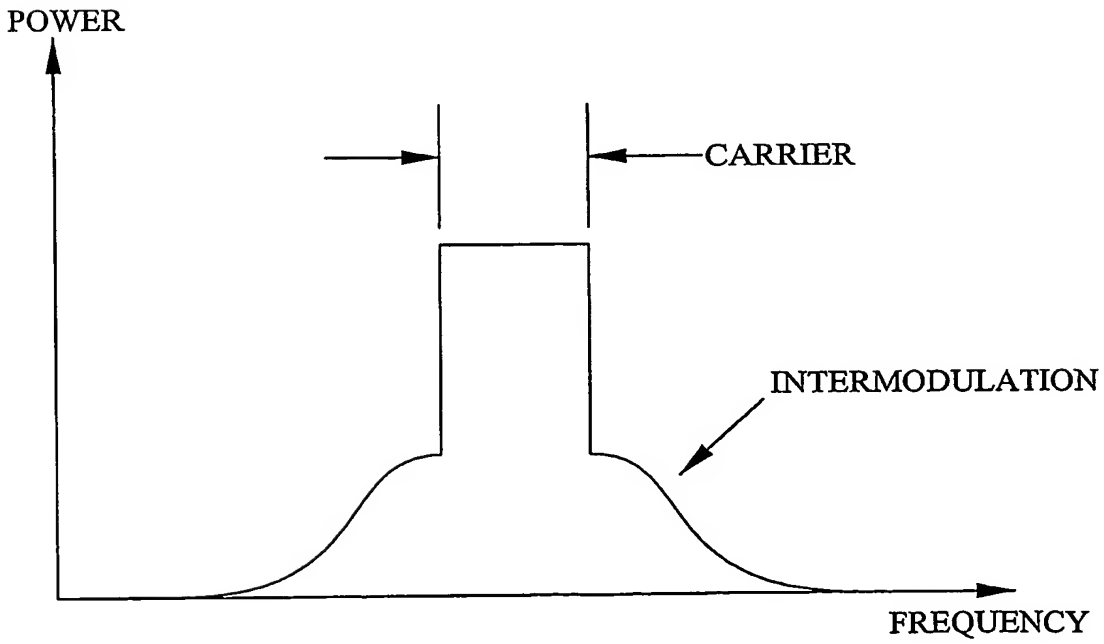
POWER
CARRIER
INTERMODULATION
FREQUENCY

Fig. 2

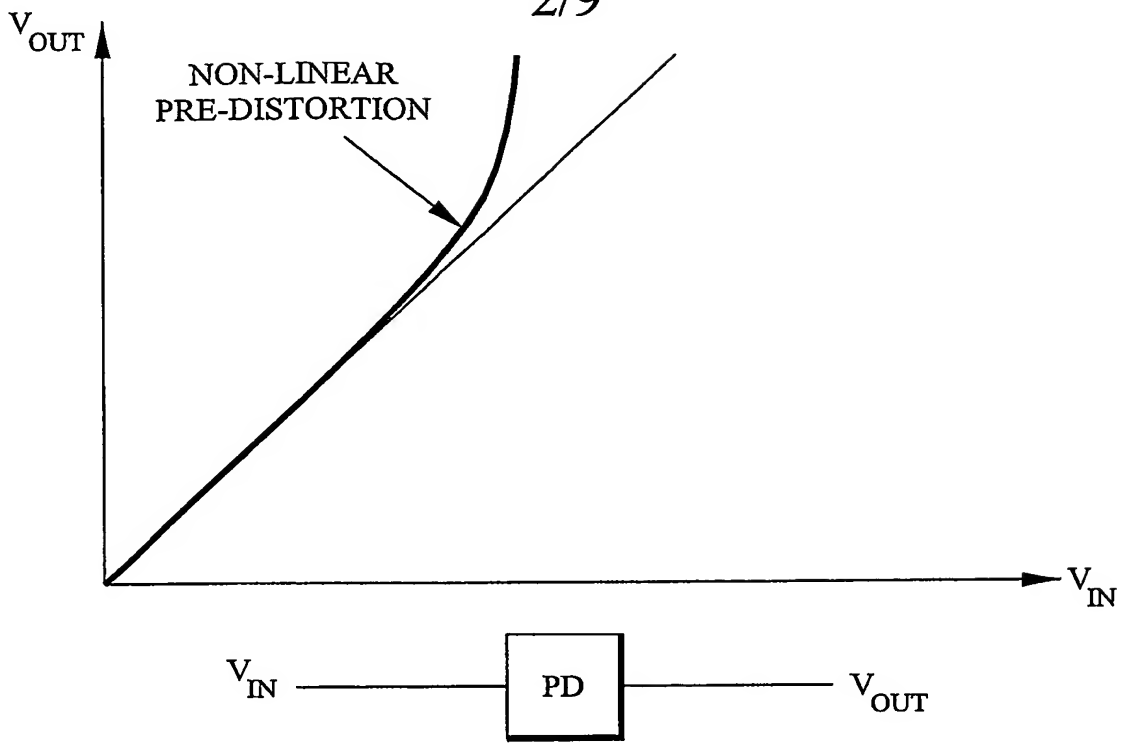
V_{OUT}
NON-LINEAR
PRE-DISTORTION
V_{IN}
V_{IN}
PD
V_{OUT}

Fig. 3

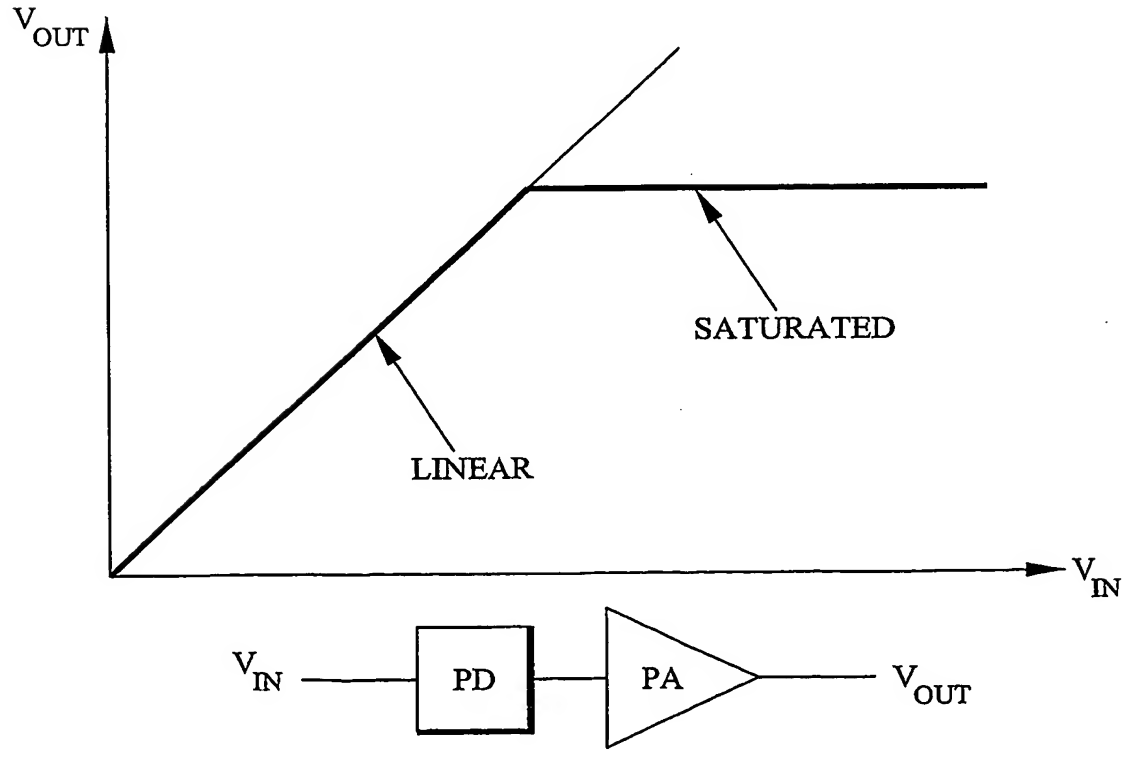
V_{OUT}
SATURATED
LINEAR
V_{IN}
V_{IN}
PD
PA
V_{OUT}

Fig. 4

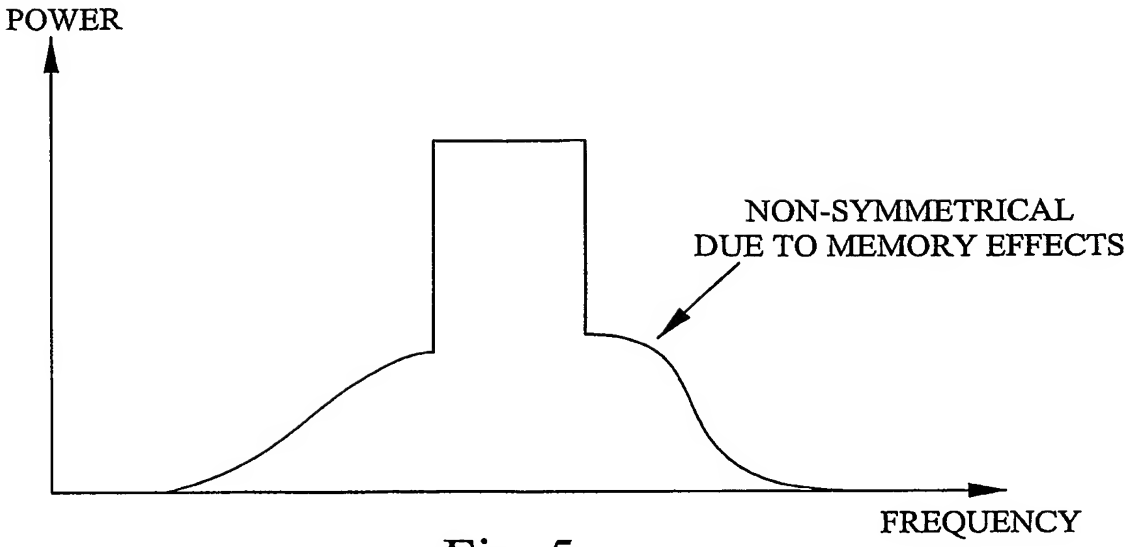
POWER
NON-SYMMETRICAL
DUE TO MEMORY EFFECTS
FREQUENCY

Fig. 5

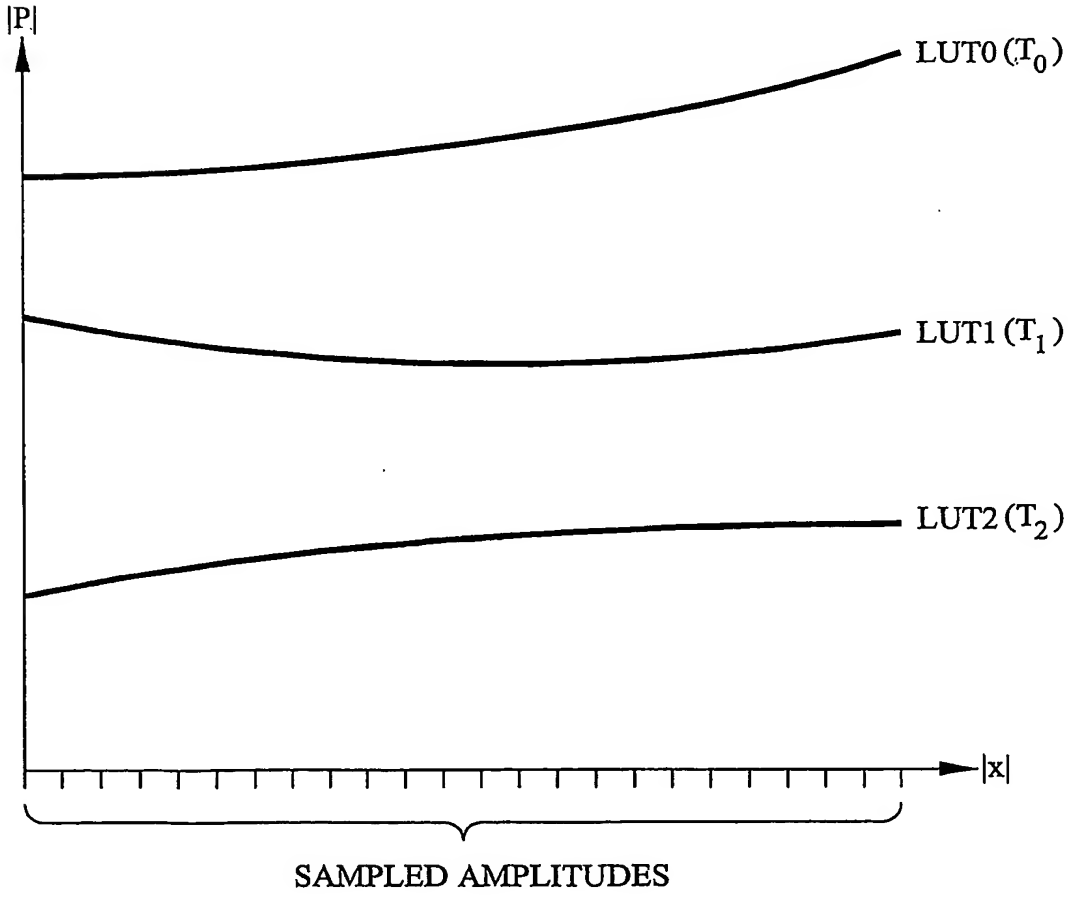
|P|
LUT0 (T_0)
LUT1 (T_1)
LUT2 (T_2)
|x|
SAMPLED AMPLITUDES

Fig. 6

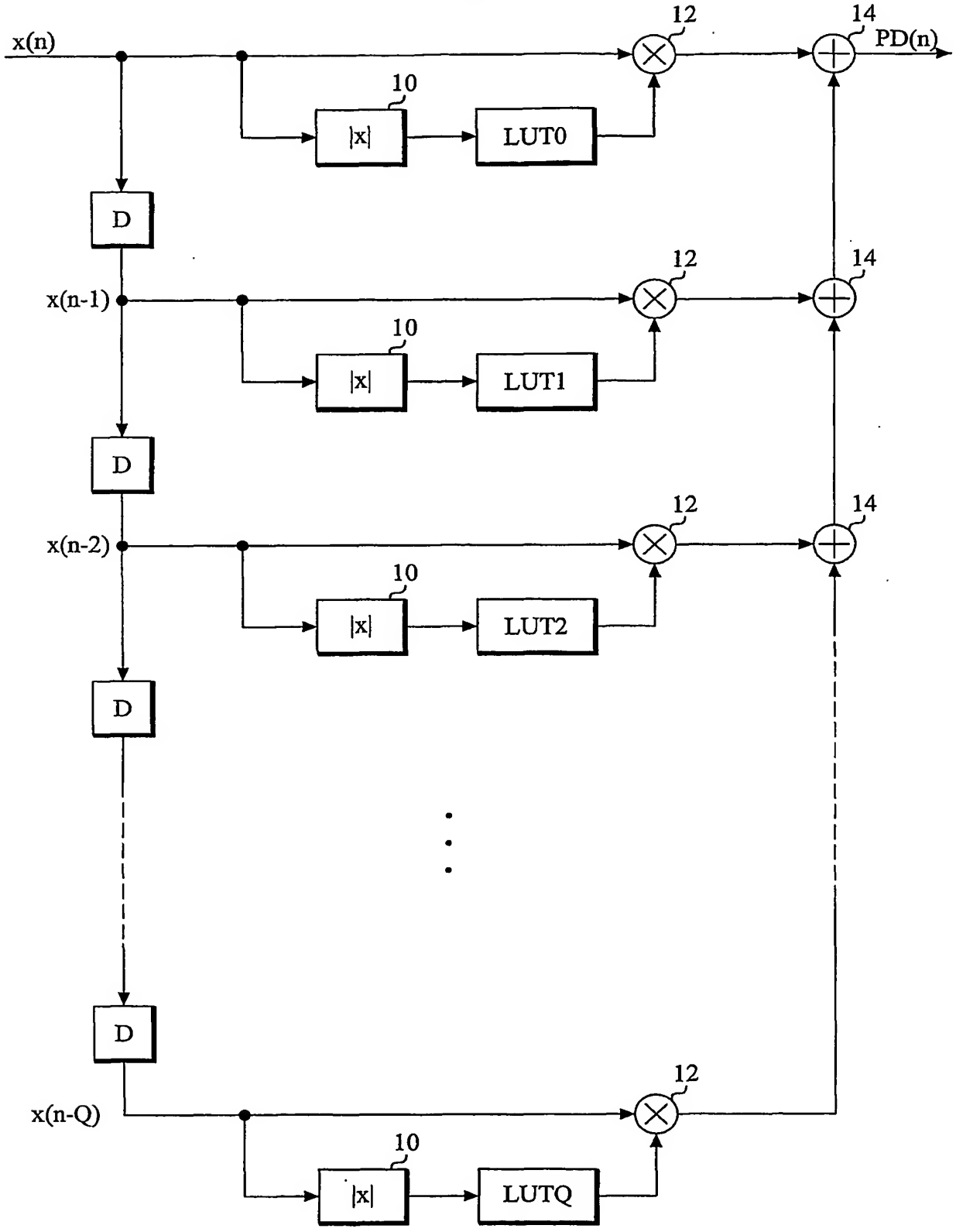
x(n)
12
14
PD(n)
10
|x|
LUT0
D
x(n-1)
12
14
10
|x|
LUT1
D
x(n-2)
12
14
10
|x|
LUT2
D
D
x(n-Q)
12
10
|x|
LUTQ

Fig. 7

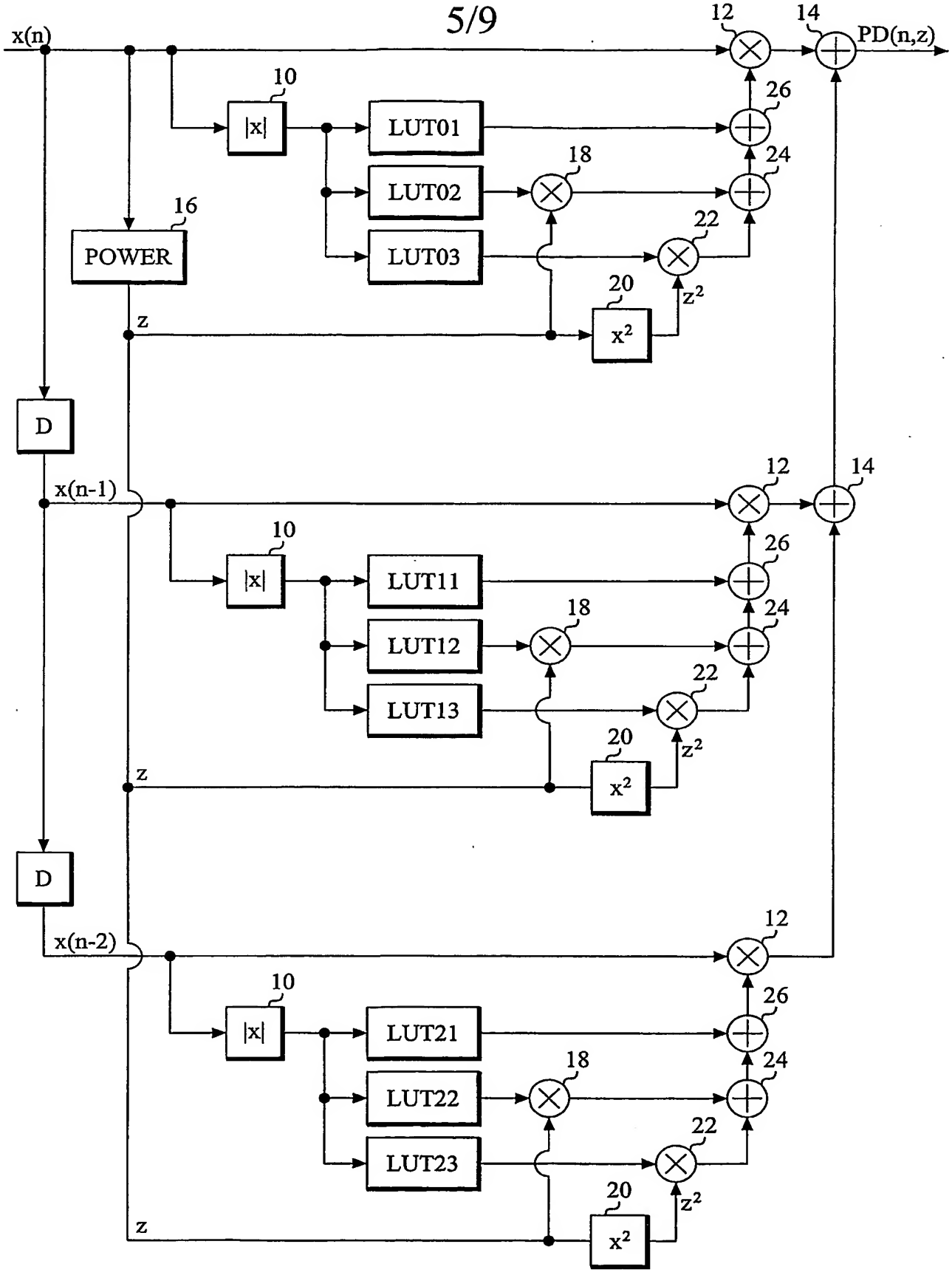
x(n)
PD(n,z)
12
14
10
|x|
LUT01
26
LUT02
18
24
16
POWER
LUT03
22
20
z²
z
x²
D
x(n-1)
LUT11
LUT12
LUT13
D
x(n-2)
LUT21
LUT22
LUT23

Fig. 8

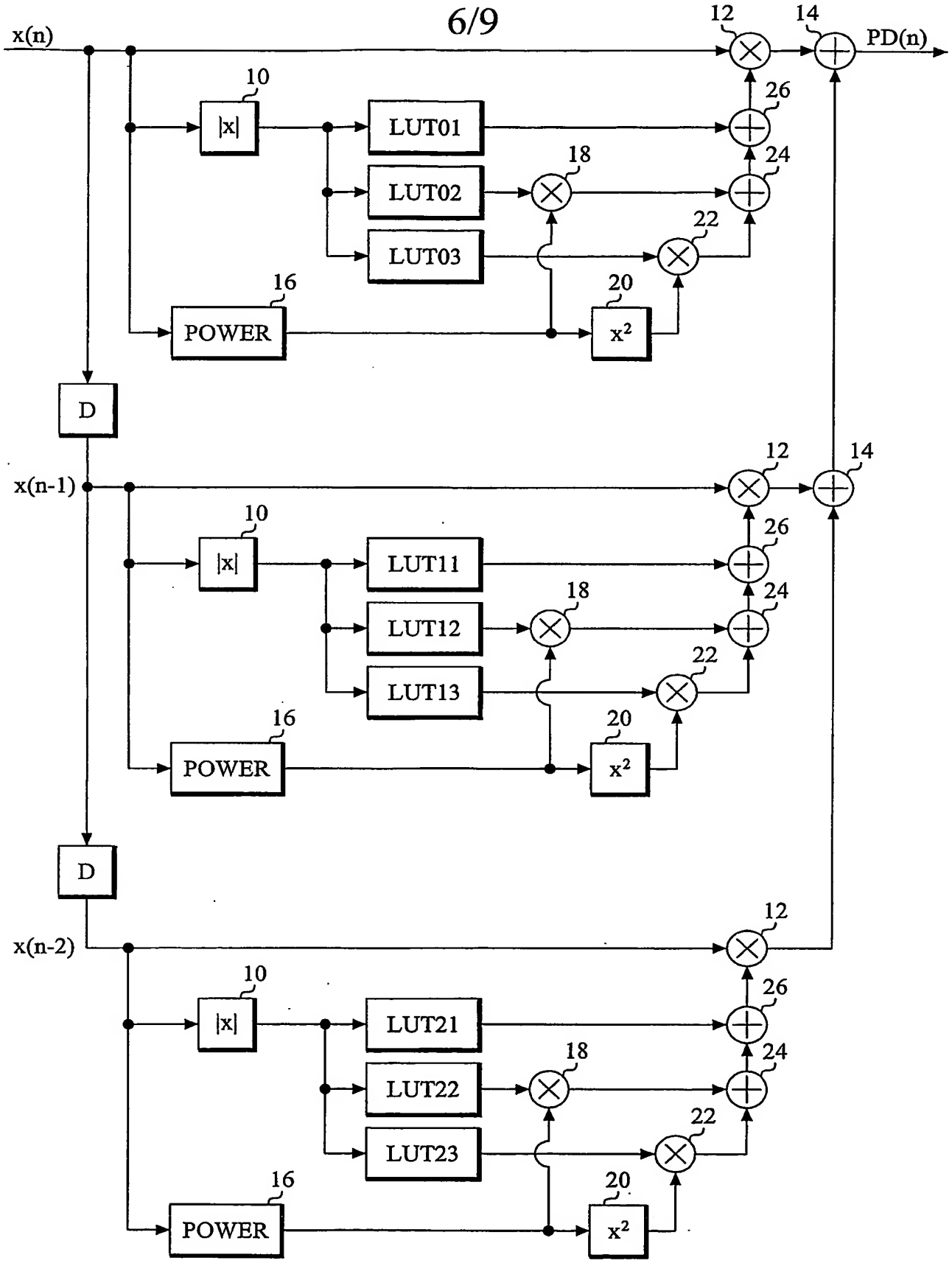
x(n)
12
14
PD(n)
10
|x|
LUT01
26
18
LUT02
24
22
LUT03
16
POWER
20
x²
D
x(n-1)
12
14
10
|x|
LUT11
26
18
LUT12
24
22
LUT13
16
POWER
20
x²
D
x(n-2)
12
10
|x|
LUT21
26
18
LUT22
24
22
LUT23
16
POWER
20
x²

Fig. 9

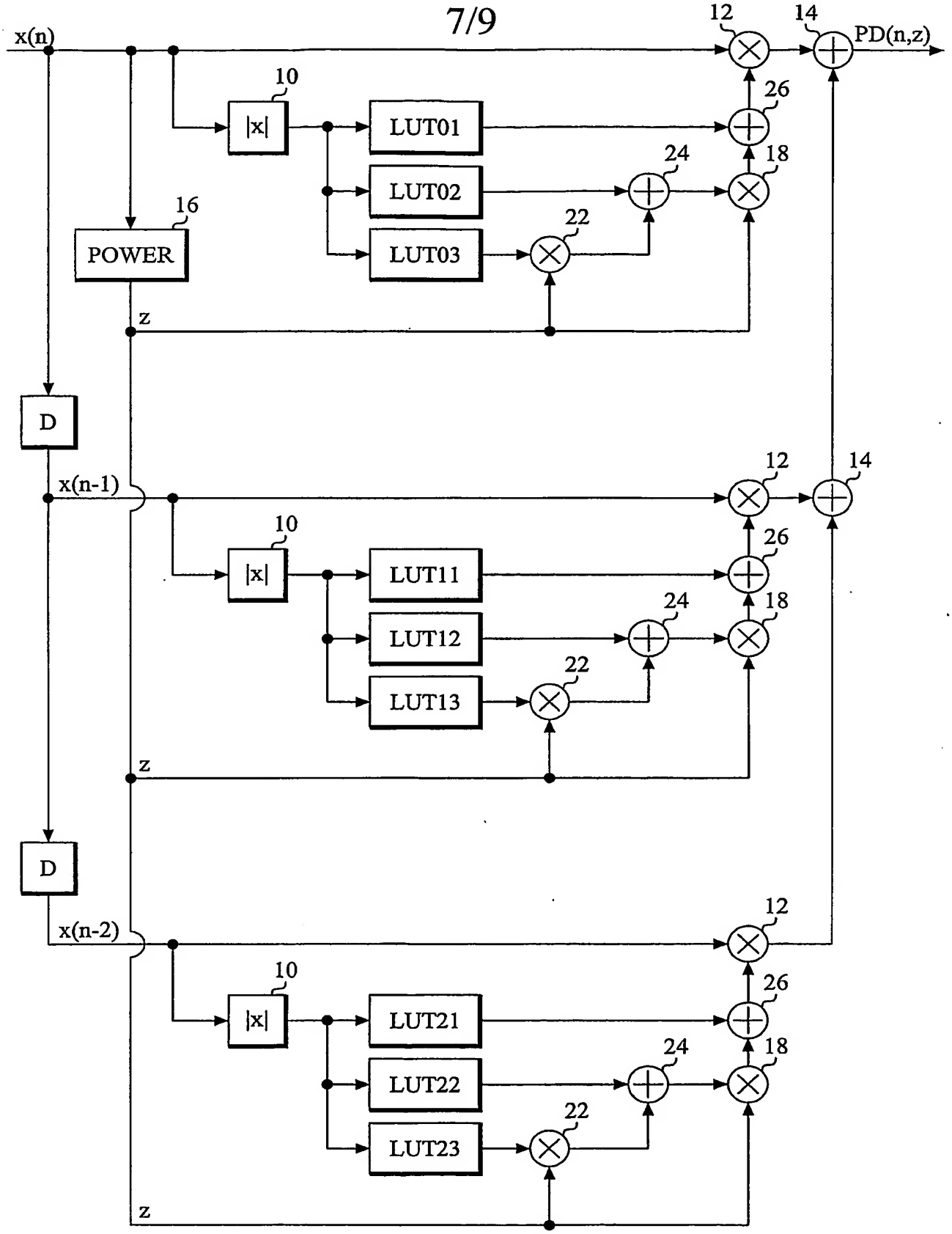
x(n)
12
14
PD(n,z)
10
|x|
LUT01
26
LUT02
24
18
16
POWER
22
LUT03
z
D
x(n-1)
12
14
10
|x|
LUT11
26
LUT12
24
18
22
LUT13
z
D
x(n-2)
12
10
|x|
LUT21
26
LUT22
24
18
22
LUT23
z

Fig. 10

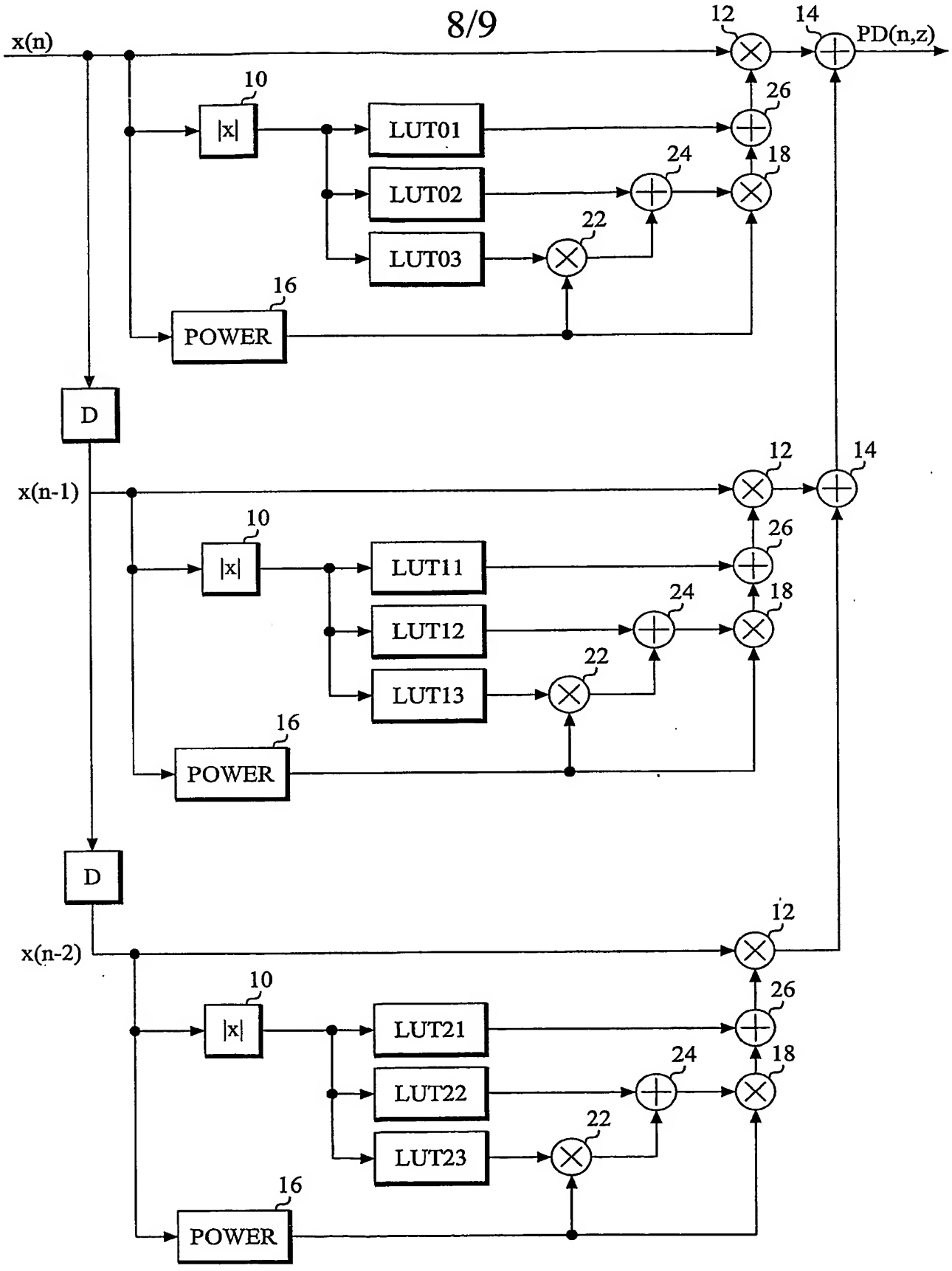
x(n)
12
14
PD(n,z)
10
|x|
LUT01
26
LUT02
24
18
LUT03
22
16
POWER
D
x(n-1)
12
14
10
|x|
LUT11
26
LUT12
24
18
LUT13
22
16
POWER
D
x(n-2)
12
10
|x|
LUT21
26
LUT22
24
18
LUT23
22
16
POWER

Fig. 11

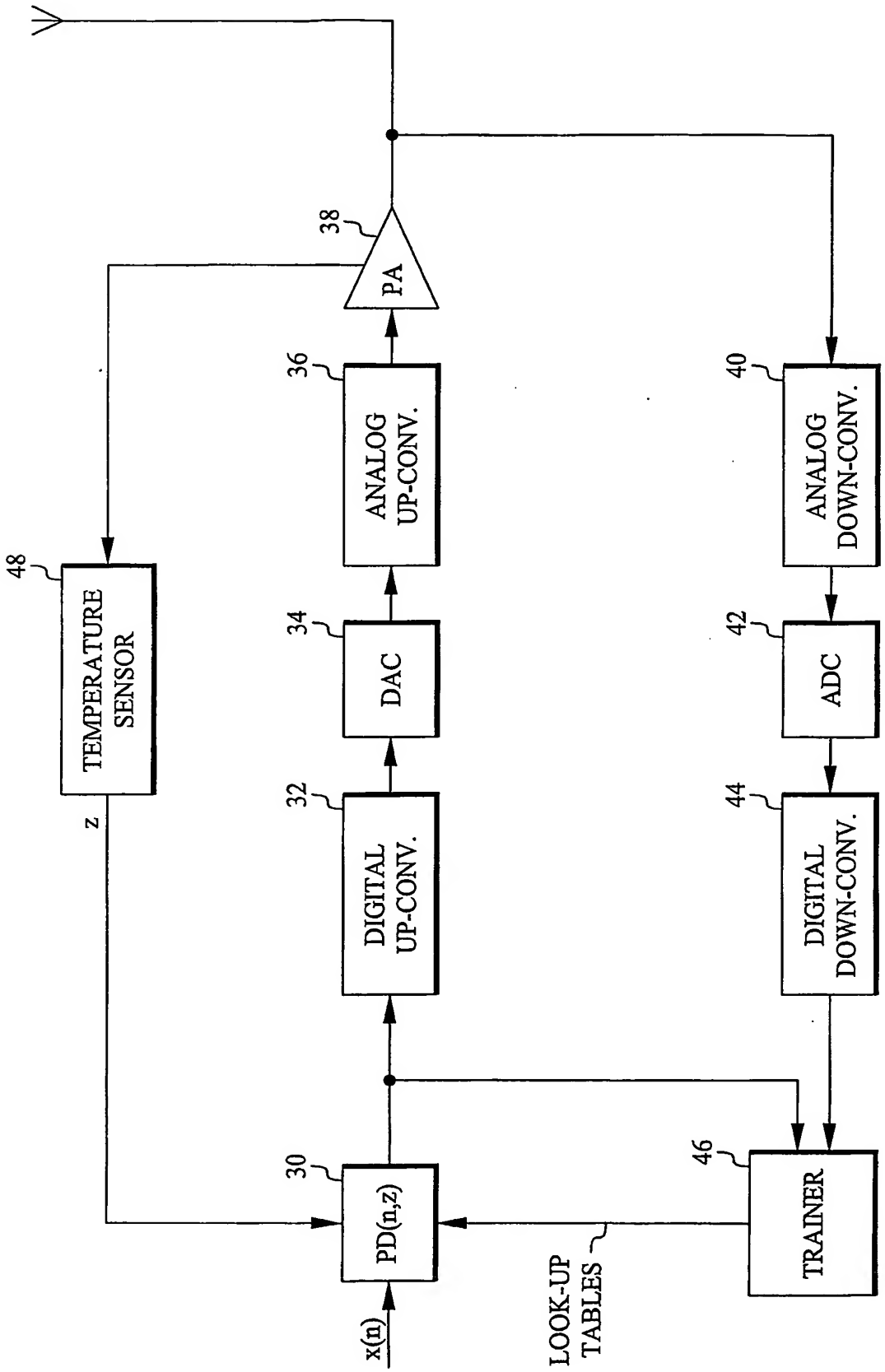
38
PA
36
ANALOG UP-CONV.
40
ANALOG DOWN-CONV.
48
TEMPERATURE SENSOR
34
DAC
42
ADC
z
32
DIGITAL UP-CONV.
44
DIGITAL DOWN-CONV.
30
PD(n,z)
46
TRAINER
x(n)
LOOK-UP TABLES

Fig. 12